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ABSTRACT

Every year, students encounter the same topics. While they may successfully learn the topics each year, there is not enough attention to the process of learning how to learn. Without knowing how to learn, students will find it difficult to transfer what they have learned to new but similar learning tasks. This fastback identifies the areas that "connect" subjects and grades, providing resources and strategies to help students become independent learners. It discusses 14 connections, which consider the repetition of topics in education and connect the topics within and across grades, subjects, and subtopics. The 14 connections are: actions, event, idea, issue, object, other living things, people, person, place, problem, process, situation, system, and theme. The fastbacks five sections include: "Introduction"; "Fourteen Connections" (general strategies and schematics); "Using Connections" (introducing the process, distinguishing between specific and general knowledge, expanding general knowledge, and extending the lesson); and "Conclusion" (by recognizing the commonalities in learning, students will come to understand that what they already have learned will help them to learn new things). An appendix includes lists of the specific questions that will guide learning in each of the 14 connections. It also offers lists of "characteristics" and "types" for each connection. (SM)

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Fourteen Connections, or How to Study Everything

Kenneth R. Chuska

2002

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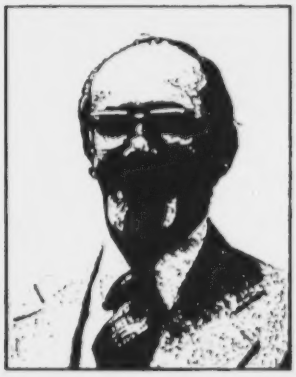

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by
Kenneth R. Chuska

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Introduction

Every year students encounter the same topics. The branches of government, punctuation, food groups, etc., are repeated in several grades and more than one subject. While students may successfully learn the same topics year after year, there does not seem to be enough attention given to the process of learning how to learn. Without knowing how to learn, students will find it difficult to transfer what they have learned to new but similar learning tasks.

This fastback attempts to overcome that shortcoming. It identifies the areas that "connect" subjects and grades. It also provides resources and strategies that will help students become independent learners.

This fastback discusses the 14 Connections. They are called "Connections" because they consider the repetition of topics in education and connect these topics within and across grades, subjects, and subtopics. But most important, using these Connections will help students learn how to learn.

Fourteen Connections

There are 14 Connections that encompass everything that is to be taught or learned. These are called "connections" for a number of reasons. They connect topics that are repeated for study within and throughout the grades. They connect studies that are related across subject areas. They connect the multiple subtopics that are found in the same category. They connect the relationships between the content and process outcomes. And they connect the processes that aid students in learning how to learn.

The 14 connections are:

- *Actions*: Usually take time and consist of more than one act or event.
- *Event*: An occurrence, especially one of some importance. Occurs in a certain place during a particular interval of time.
- *Idea*: Any concept existing in the mind as a result of mental understanding, awareness, or activity.
- *Issue*: A point in question. A matter that is in dispute or under discussion. A basis of debate or controversy.

- *Object*: Anything perceptible by one or more senses, especially anything that can be seen or felt; a material thing.
- *Other Living Things*: Anything living of a nonhuman nature.
- *People*: All of the persons constituting a community, tribe, family, company, race, or nation because of a common culture, history, religion, interests, or the like.
- *Person*: An individual human being.
- *Place*: A particular portion of space, whether definite or indefinite.
- *Problem*: Any matter involving doubts, uncertainty, or difficulty dealing with choices of action that are difficult either for an individual or society. Also a matter for which known strategies or methods are inadequate.
- *Process*: A systematic series of actions directed to the same end. A continuous action, operation, or series of changes taking place in a definite manner. A series of progressive and interdependent steps by which a result is obtained.
- *Situation*: A state of affairs or combination of circumstances at a given moment.
- *System*: An assemblage or combination of things that form a whole or that operate in unison. An ordered and comprehensive assemblage of facts, principles, doctrines, or the like, in a particular field of knowledge or thought. A coordinated body of methods or a complex scheme or plan of procedure. Any method or plan of procedure. A method or

scheme of classification. The structure or organization of society, business, or politics.

- *Theme*: The subject of discourse, discussion, meditation, or composition.

Using the 14 Connections will help students transfer knowledge and processes to new learning. The ability to categorize any topic into one of the 14 Connections will enable students to identify and apply strategies of learning about the Connections. Each learning experience about the Connections will become cumulative. When students practice using the strategy for studying a topic in a specific Connection, they will be able to recognize that similar approaches can be used to study any item that can be categorized into that Connection.

General Strategies

The strategies of the 14 Connections use the common elements that exist in various topics. These strategies make learning cumulative by not only having students learn the desired information about one topic, but also allowing them to apply that same learning to any similar topic.

In order to transfer knowledge from one topic to similar topics, students must understand "repetitive parallelism." Repetitive parallelism occurs when there are a number of repeating examples within the topic being studied. For example, when studying the 13 Colonies, there will be many aspects that repeat from one colony to the next. The students might need to know about each colony's agricultural products or forms of government, for example.

When a topic is introduced, it might fit easily into a number of Connections. The traditional approach would be to have all students study a little part of all the categories — an overview approach. But studying one Connection gives the students the opportunity to select the approach they prefer.

The first step students should take when they are introduced to a new topic is to brainstorm answers to the question "What do you know?" Depending on how much previous exposure to the topic that the students have, they may have to move on to the question, "What do you think you know?" Other questions that can start the initial brainstorming activity are "What do you want to know?" and "What do you feel or believe?" Students should ask these questions whenever they study a new topic. The first question makes them recall any facts they have already learned, while the second question allows them to guess. If their guesses are wrong, they can be used to demonstrate opportunities for learning.

After working individually, the students can combine into groups to share their answers, then each group shares answers with the rest of the class. When the entire class has shared their answers to these questions, all students know what each knows about the topic and are ready to move on.

The answers that come from these questions are the basis for creating more specific questions that link the content being studied to the Connections. For example, when studying a topic under the Connection, *place*, one of the specific questions is, "Where is it located?" Brainstorming these specific questions gives direction

and sets goals for the study. Often the specific questions can be put in a handout to serve as a study guide on a topic. Sample specific questions for each Connection are included in the Appendix.

In answering these questions, the students learn to distinguish between "specific" and "general" knowledge. Specific knowledge is that which is applicable only to the study of that particular topic. General knowledge can be used to study any topic that is categorized into the same Connection. Students need practice in recasting the specific characteristics into more general terms. In this way, whenever students encounter a new topic, they can use their previous experiences to advance their understanding.

Schematics

In order to use the strategies of the 14 Connections, students need to produce "schematics." While students should produce a new schematic for each Connection, each schematic will follow the same pattern.

Each schematic has four parts. Part one simply identifies the Connection. Is it a *place*? An *issue*? A topic may fit into one or more Connections, but only one Connection should be selected by the teacher or student.

Part two of the schematic is a list of the "characteristics" of a Connection. For example, for the Connection, *object*, the characteristics could be: form, color, size, function, value, etc. These general characteristics are developed after the initial student brainstorming has taken place.

Part three lists the "types" of what is being studied. For example, for the Connection, *place*, the types might be homes, cities, colonies, regions, etc. The types listed in the schematic are the first repetitions usually found in schools. Thus in history classes in different grades, students might study different religious groups. Students will find it easier to learn about these groups when they understand that there are general aspects that all groups have in common.

The characteristics of a Connection usually are fairly specific because they apply directly to what is being studied. The types are more general because they include all similar items to the one being studied.

For the fourth part of the schematic, students list very specific examples. Thus if students were studying the systems of the human body, one type might be "the digestive system." For the fourth part of the schematic, the students would list the many parts of that system.

The schematic should be treated as a developmental task. Students brainstorm their lists as topics are introduced. This practice also helps students to see that many topics can be studied in the same way.

Introducing the First Connection

There are seven instructional strategies that teachers need to understand before they are ready to work with the 14 Connections. They are:

- Strategies for working with the students' initial brainstorming efforts.
- Alternative strategies for assigning work with the Connections.
- Alternative strategies for assigning work with the specific questions.
- A strategy for answering the question, "Are there some things that all students should know?"
- Working with the concept of "repetitive parallelism."
- A description of the concept of "practice learning."
- The use of starter examples for serving as the basis for questions that will lead to higher-level thinking.

These seven strategies will lead the students to understand how the Connections can help them study almost all their subjects in any grade. They also will help

students to become more involved in decisions about their education and will provide a process for learning how to learn about anything that they can relate to one of the Connections.

All studies begin with students brainstorming by using one of the four questions discussed earlier. If the issue, problem, or situation is familiar to the students, the first two questions are used: What do you know? What do you think you know? If the topic is not familiar, the third question is used: What do you want to know? In many cases, the issues, problems, or situations will call for the fourth question: What do you feel or believe?

The students' individual brainstorming always is followed by sharing within and among their groups. When the students have brainstormed for a while, the teacher helps them to understand the difference between special and general knowledge.

There are many approaches that can be applied to the use of the Connections to allow for variety in the classroom. The teacher can assign these approaches to small groups or to individuals, or the students may be allowed to choose their own approach. Since students will be studying a Connection many other times, they can choose other paths of study later. This reduces the common student complaint that "We studied that before."

After the topic to be studied is chosen, the students use the four basic questions to generate a list of more specific questions. There are many strategies for using these questions. Some of them are:

1. Assign to the whole group all of the questions generated by the students in answering the question, "What would you like to know?"
2. Assign some questions to all of the students and let them generate a few additional ones on their own.
3. Allow each student or small group of students to choose a given number of questions for study.
4. Assign groups of questions to particular groups of students.
5. Have each student write a number of their own questions and then be responsible for their own answers.
6. Have each student write a number of their own questions, then exchange them with questions from other students.

Special attention can be given to student-generated questions that call for higher-level thinking or application beyond just answers that rely on memory.

In designing their own questions, students will come to realize that some of their answers may not be found in their texts. This is an important lesson to be learned about any text.

It is important to remember that there are some things that all students should learn from a lesson. For most topics, these basic facts are the answers to the "six W's," the questions familiar to most journalists: Who? What? When? Where? Why? and How? These questions can be given as an independent assignment for all students to answer, and students can be tested on these facts.

"Repetitive parallelism" is a common factor in all the Connections. Whenever two or more topics are studied under one Connection, there are common characteristics that can be used to study each of them. For example, when studying the 13 Colonies, each colony can be seen as a topic under the Connection, *place*.

One instructional strategy that takes advantage of repetitive parallelism is to place each item, such as the 13 Colonies, on one side of a grid and a series of questions, such as the "six W's," across the top. Not only does this approach help students learn the basic facts they need to know; it also teaches them that there are commonalities among all the topics. The questions can be used to ask basic factual questions or to have students engage in higher-level thinking, such as asking students to draw conclusions, make generalizations, and make inferences.

Another important concept is "practice learning." Just as lawyers and doctors refer to their "practice" in law or medicine, teachers might consider referring to their roles as "practicing teaching." The same principle is involved: learning on the job. If it is good enough for those professions, why is it not good enough to think about the concept of "practicing learning" for students?

Too often students are evaluated on a one-time learning situation, the teach-test-reteach strategy. A "practice learning" opportunity should precede the evaluation process. This process can be used in each of the introductory lessons to each of the 14 Connections.

When the class is studying several topics under one Connection, a useful strategy is to allow students to choose which one of the subtopics that they want to study. The students, either in small groups or individually, are asked to prepare presentations about their study. Time is provided for their planning, access to the library, and for giving their presentation. This part of the strategy is free from grading because this is the practice round. However, students evaluate their own work with such questions as:

- Did you meet your goals?
- How well did you work together?
- Did your plan work?
- What would you do to improve your work, product, or presentation?
- What ideas did you learn from the other groups' presentations?
- Did you use your time efficiently? If not, how could that be improved?
- What did you observe that would be of value to your own study?

In addition to their self-evaluations, the students should be given an opportunity to critique other presentations with such questions as:

- What would you suggest to improve?
- What did you learn from the presentation?
- Was it evident that the group had planned well together?

- Did all members have a part?
- Was it well organized?

Once the students have been through the self-evaluation and the viewers' critiques, the teacher offers the choices for studying the remainder of the subjects. This part will be graded. This provides an opportunity for the students and teacher to establish criteria for the second round of studies and presentations. Thus all students know from the outset how their products and presentations will be evaluated. Again, their choice is to work in a group or as an individual.

Using Connections

This section provides a detailed study plan that can serve as a guide for all the Connections. It uses the Connection, *place,* because it includes topics that are studied in every grade and many subjects. While many places can be chosen, the place of Iceland has been chosen for this exercise.

There is no particular order to the sequence in which the Connections are studied. Each Connection stands alone and follows the same pattern of development as the others do.

Introducing the Process

Teacher: How many of you have read or studied about Iceland? When we begin the study of something new or nearly new, we can begin by using one or more of the four Basic Questions. They are:

- What do you know?
- What do you think you know?
- What do you want to know?
- What do you feel or believe?

The first two questions go together. I would like each of you to write three things that you know or think you know about Iceland. (Note: The second question is very important. It indicates to the students that it is all right to guess and, even more important, to guess and possibly be wrong.)

Now share your ideas with those students around you. Add any other ideas as you work together. (An idea might be to have small groups of students use a "web" approach, with "Iceland" written in the middle and the shared items listed around the outside. If possible, chart or butcher paper can be used.)

Now I'd like the groups to share your combined lists. You can add to your lists from other groups' contributions.

Distinguishing Between Specific and General Knowledge

Teacher: There are two reasons for learning about any place. One is to learn facts, data, or information about it. This is called the content. The other is to learn a process for learning about a place. Let's see how those two reasons relate to the study about Iceland.

Let's see if we have a real reason for studying Iceland.

- Are you planning to go there for a visit, vacation, business, or to live?
- Is there a major event taking place there?
- Is Iceland part of your ancestry?
- Is a member of your family being assigned or stationed there?
- Are you going to have a visitor or house guest from there?

- Do you have a personal interest or want to become an expert about Iceland?
- Do you have a pen pal or e-mail friend from there?

(In most cases the answers to those questions will be "No.")

Since there doesn't seem to be a real reason for studying this place for its content only, let's examine the other reason for studying Iceland.

(As the answers to the following questions are given, they are added to the students' brainstormed lists.) I see some of you have listed island / fishing. If Iceland is an island, what do we know about islands? What industries do you think would be there? What other industries might there be because of fishing? What do we get from fish?

Any answers that are true only for the study of Iceland are called "specific knowledge." If we were studying another place that was near water — such as a river, lake, or ocean — which ideas could we use again? Since we will be able to use this information again, these items would be examples of "general knowledge." Can somebody think of a statement we might use to think about specific and general knowledge?

Because Iceland is near water, any place that you study that is near water probably will have fishing as an industry or, at least, as a popular form of recreation. They probably also will get similar products from fish, and there is a great chance that they will have related industries that are similar to those in Iceland.

Expanding General Knowledge

Teacher: Take the list you made to answer what you know about Iceland and look at the items on the list. You will notice that many of the items are specific knowledge about Iceland. Now take those items and name the larger, general categories to which they belong. For example "fishing" would fall into the category of "industry" or "recreation." "Cold" fits into "climate" or "weather," "Vikings" into "people." Complete categorizing the other items on your charts.

(This activity will result in a preliminary list of the characteristics and types for the Connection, *place*. A full list would be made only after multiple sessions in studying that particular Connection.)

Teacher: Think about any place in the world where you would like to go. Substitute it for Iceland. Do you see that the categories that you have identified for Iceland can now be applied to your study of the new place?

Let's review the process that we used to study Iceland.

Step 1: We listed what we knew and what we thought we knew.
Step 2: We shared our lists with others.
Step 3: We shared the groups' lists.
Step 4: We identified specific and general knowledges.
Step 5: We translated the specific topics into their larger categories.

Step 6: We substituted the name of any "place" for Iceland and used its general categories as a study guide for anything that can be categorized as a place.

Anytime something can be identified as a place, you can use this process to help you learn about it.

Extending the Lesson

Teacher: Now that we have learned how to study about a place, let's look at the list you generated to answer the question, "What do you want to know?" Your list of questions can be used as a study guide.

What do you want to know?

- What is its history?
- Where is it located? How do you get there?
- How big is it?
- What kind of government does it have?
- What do people there do for a living?
- What is its weather like?
- Who found it? When?
- Is it part of a larger place?
- What are it flora/fauna/natural resources?
- How does it depend on other places?
- How has the place affected people?
- Are there any dangers/problems?
- Why would someone want to visit there?
- Why would someone want to live there?

Now we can use the lists we made to begin our study of Iceland to find out if what we knew or thought we

knew is true. This list can be used any time you need to learn about a place.

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Conclusion

As students move through the grades, they will face numerous things they need to learn that are very similar to things they already have learned. Whether they need to learn about an issue or idea, person or problem, there are many aspects of the new learning that will be familiar to the students. Students need a way to recognize these similarities and to use what they already know to learn the new topic.

All of the 14 Connections are used in the same manner. When a topic is presented for study, the students decide what Connection it fits into. Is it an object? A system? After the students decide on the Connection, they then answer one or more of the four Basic Questions: What do you know? What do you think you know? What do you want to know? and What do you feel or believe?

After students list their the individual responses, they are asked to pool their responses within their group and to add any others that come to mind. Then they will share their responses among the groups. From these lists are selected the specific questions that will guide their study.

By recognizing the commonalities in learning, students will come to understand that what they already have learned will help them to learn new things. That is, they will have learned how to learn.

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Appendix

The Appendix includes lists of the specific questions that will guide learning in each of the 14 Connections. It also includes lists of "Characteristics" and "Types" for each Connection.

The study questions listed in this appendix were derived by having hundreds of teachers in workshops and graduate classes brainstorm to answer the question, "If you were going to study this topic, what questions would you ask?"

These are not lists to be memorized, but are to be cumulatively developed as students study the same Connection as they encounter it in different subjects and different grades. The lists can be used as references for students after they have had a few experiences with the Connections. These lists are offered as starter ideas.

Actions

Characteristics

Description	Repetitiveness
Frequency	Reasons
History	Need
Alternatives	Cycles

Steps/stages	Time period
Category	Causes
Value	Importance
Participants	Those affected
Positives	Negatives

Types

Scientific	Psychological
Mechanical	Political
Historical	Social
Mental	Individual
Group	Intergroup
Personal	Interpersonal
Physical	Governmental
Moral	Ethical
Environmental	Legal

What do you want to know?

What is the action?
What and who was involved?
What were the pros and cons?
Who was affected?
Who was for or against it? Why?
What were its objectives?
What caused it?
Who witnessed the action?
When did it happen?
How long did it take?
Where did it occur?
Were any new problems created?
Was the action repeated?

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Could anybody take that action?
Could it happen again?

Events

Characteristics

Description	Repetitiveness
Frequency	Reasons
History	Need
Alternatives	Cycles
Steps/stages	Time period
Category	Causes
Value	Importance
Participants	Those affected
Positives	Negatives

Types

Scientific	Psychological
Mechanical	Political
Historical	Social
Mental	Individual
Group	Intergroup
Personal	Interpersonal
Physical	Governmental
Moral	Ethical
Environmental	Legal

What do you want to know?
What is its history?
What were its objectives?
What and who was involved?
Was special training involved?

What preparation was involved?
When did it happen?
How long did it last?
Where did it occur?
What other event was like it?
How could it be improved?
What value did it have?

Ideas

Characteristics

Beneficiaries
Effects
Usefulness
Positives
Origin
Process
Constraints
Outcomes
History
Importance
Problems
Functions
Value
Negatives
Implementation
Blockages
Descriptions
Category
Consequences

Types

Superstitions
Moral
Philosophical
Religious
Historical
Technological
Scientific
Psychological
Environmental
Metaphysical
Ethical
Ideological
Social
Physical
Artistic
Futuristic
Political
Economical
Ecological

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What do you want to know?
Who had the idea?
What is its history, origin, evolution?
Is it a positive or negative idea?
What and how do proponents, opponents do to promote their views?
What are the pros and cons?
What category of idea is it?
What are its limitations?
What are its costs?
What are its functions, purposes, objectives?
What would it take to implement it?
How can it be improved?
What will it do for those whom it affects?
What is its importance?
What criteria, standards will be used to evaluate the idea?
What would be the consequences if the idea were implemented?
What aspects of life would changed if the ideas were to be put into effect?

Issues

Characteristics

Why is it an issue?	Positions
Positives	Negatives
Causes	History
Who is involved?	What is involved?
Who, what is affected?	Consequences
Time frame for solution	Resources needed

Goals	Criteria for decision, selection
Size, extent	Data needed
Seriousness	Alternatives, options
Parts	Costs
Coping strategies	Prognosis
Ramifications	Precedents
Analogies	Past similarities
Future prevention	

Types

Spiritual	Mental
Societal	Political
Moral	Ethical
Physical	Psychological
Emotional	Religious
Personal	Interpersonal
Group	Intergroup
Historical	Legal
Scientific	Economic
Environmental	Ecological
Human relations	Medical
Educational	Financial

What do you want to know?
What is the issue?
What is its origin, history, evolution?
What type of issue is it?
Why is it an issue?
Who will be affected?
Who, what is involved?
What are the pros and cons?

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Where can the facts be obtained?
How serious is it?
What are conflicting beliefs, interests, data?
What criteria, standards must its solution meet?
Are there precedents that can be followed
What will its resolution change?
Is there a time factor involved?
How will we know that the resolution is successful?

Object

Characteristics

Form
Color
Size
Shape
Weight
Number
Life span
Aesthetics
Value
Function
Composition
Speed
Works how
Made how
Safety
Texture
Sound
Odor
Flavor

Types

Utensils
Lighting
Machines
Furniture
Books
Vehicles
Clothes
Art works
Inventions
Equipment
Abodes
Supplies
Games
Floor coverings
Foods
Tools

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What do you want to know?
What is its origin, history?
Who invented / designed it?
What purpose does it serve?
In what category of objects does it belong?
How is it made / produced?
What skills are needed to make it / use it?
What does it do for society?
What does it do for groups?
What does it do for individuals?
When was it made?
What are the standards / criteria for evaluating it?
How could it be improved?
How much would it cost to reproduce it?
Does it change?
Is it marketable?
What is its life span?
Can it be replaced?
Does it affect the way people live or work?
Is it dangerous?

Other Living Things

Characteristics

Description	Common name
Location	Value
Life cycle	Diet
Phylum / Division	Species
Stages of development	Life span
Habitat	Domestic / wild
Enemies	Protection

Types

Mammals	Insects
Flowers	Trees
Weeds	Pests
Pets	Reptiles
Echinoderm	Fungi
Amphibians	Fish

What do you want to know?
What is it?
Where can it live?
What is it good for?
Is it it easy to find?
Is it domestic or wild?
What are its enemies, allies?
What is its (are their) value? To whom?
To what order/class/family does it belong?
What is its role in ecological balance?
What does it eat?
How does it reproduce?
Is it similar to other living things?
What defenses does it have?
How long does it live?

People

Characteristics

Language	Influence
Leaders	Contributions to others
Religions	Culture
Stereotypes	Customs
Dress	Origin

Food
Language
Occupations
Education
How like us
Demographics
Politics
Recreation
Relationships with us
History
Their Future

Types

Religious Groups
Community Groups
Social Groups
Political Groups
Ethnic Groups
Racial Groups
Career Groups
Age Groups
Personal Groups
Friends
Make-believe Groups
Service Groups
Social Class Groups
Criminals
Recreation Groups
Business Groups
Industry Groups
Ancient Peoples
Nationalities

What do you want to know?
What are their origins?
What are their customs or traditions?
What is their location?
What is their language?
What is their religion?
How are they governed?
What are their homes like?
What do they eat?
What do they do for recreation?
What is the population size?

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Person

Characteristics

Male / Female
Parents
Major actions
Avocations
Critical Influences
Ideology
Morals
Anecdotes
Ancestry
Economic situation
Achievements
Any handicaps
Time period
Contributions
Occupation
Other family members
Positive / Negative characteristics
Philosophy
Values
Influence on others / events / me
Religion
His / her heroes, mentors, leaders

Types

Political leader
Military leader
Scientist
Industrialist
Aerospace leader
Home person
Artist
Child(ren)
Laborer
Entertainer
Salesperson
Inventors
Societal leader
Educator
Business leader
Farmer
Religious leader
Author
Parent
Judicial person
Builder
Service person
Government leader
Discoverers

What do you want to know?
What was his or her importance?
What was his or her occupation?
What influence did he or she have on others?
Is the person still living?
What were some critical life events?
What is an outstanding period of his or her life?
Where did he or she live?
When did he or she live?
What was his or her family background?
Who influenced him or her?
What education did he or she have?
Did the person's sex influence his or her life?

Place

Characteristics

Topography
Location
Transportation
Unique features
Natural resources
Political divisions
Climate
Geography
Size
Businesses
Industries
Economics
Statistics
Education
Government
Religion
Interesting facts
Attractions
Plants
Animals
People

Types

Homes
Cities
Colonies
Schools

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Counties	Buildings
States	Islands
Regions	Geographic features
Continents	Tourism centers
Hemispheres	Religious centers
Space	Non-land features

What do you want to know?
What is its history?
Where is it located? How do you get there?
How big is it?
What kind of government does it have?
What do people there do for a living?
What is its weather like?
Who found it? When?
Is it part of a larger place?
What are its flora/fauna/natural resources?
How does it depend on other places?
How has the place affected people?
Are there any dangers/problems?
Why would someone want to visit there?
Why would someone want to live there?

Problem

Characteristics

Why is it a problem, issue?	Positions
Positives	Negatives
Causes	History
Who is involved?	What is involved?
Who, what is affected?	Consequences
Time frame for solution	Resources needed

Goals
Size, extent
Seriousness
Parts
Coping strategies
Ramifications
Analogies
Future prevention

Criteria for decision, selection
Data needed
Alternatives, options
Costs
Prognosis
Precedents
Past similarities

Types

Spiritual
Societal
Moral
Physical
Emotional
Personal
Group
Historical
Scientific
Environmental
Human relations
Educational

Mental
Political
Ethical
Psychological
Religious
Interpersonal
Intergroup
Legal
Economic
Ecological
Medical
Financial

What do you want to know?
What is the problem?
To whom, what is it a problem?
Why is it a problem?
What are some probable causes?
Who, what is involved, affected?
How serious is it?
Why is it necessary to solve the problem?

What would happen if nothing were done?
Can the problem be solved?
What is necessary to solve the problem?
Who will be affected by the various outcomes?
When is it necessary to solve the problem?
What is your reaction to the problem?
What are others' reactions to the problem?
What are the pros and cons of each position?
Which elements are objective, emotional?
What have been similar problems in the past?
How have similar problems been solved in the past?
How could similar problems be avoided?
What are the costs of each of the alternatives?
What resources are needed to solve the problem?
How are people currently coping ?
Are policies involved?

Process

Characteristics

Description	Applications
Steps, stages, parts	Variations
Alternatives	Purposes
Reason for	Origin
Need	Value
Consequences	Training needed
Technology needed	Equipment involved
Problems	Advantages
Safeguards	Cautions
Improvements needed	History
Relationship to other processes	

Types

Mechanical
Political
Writing
Designing
Artistic
Evaluating
Technical
Psychological
Business
Mental
Personal
Manufacturing
Educational
Constructing
Communicating
Experimental
Automation
Physical
Industrial
Medical
Mathematical

What do you want to know?
What is its origin, history?
Who was the designer, founder, inventor?
Where can you find out about it?
What is its function, value?
What is it a part of? What are parts of it?
Where is it used?
What are the positives, negatives of its use?
How can it be improved?
What preparations are necessary for its use?
What are alternatives to this process?
What safeguards are needed?

Situation

Characteristics

Why is it a problem, issue?
Positives
Causes
Positions
Negatives
History

Who is involved?
Who, what is affected?
Time frame for solution
Goals
Size, extent
Seriousness
Parts
Coping strategies
Ramifications
Analogies

What is involved?
Consequences
Resources needed
Criteria for decision, selection
Data needed
Alternatives, options
Costs
Prognosis
Precedents
Past similarities

Types

Spiritual
Societal
Moral
Physical
Emotional
Personal
Group
Historical
Scientific
Environmental
Human relations
Educational

Mental
Political
Ethical
Psychological
Religious
Interpersonal
Intergroup
Legal
Economic
Ecological
Medical
Financial

What do you want to know?
Who, what was involved?
How would you categorize it?
When, where did it occur?
Was it natural or man-made?

What led up to it?
What were its causes?
How serious was it?
What were the effects?
How could it have been avoided?
What were the benefits, detriments of the situation?
How was it resolved?
What are the pros and cons?
What was the general feeling of those involved?
How long did it go on?
In what ways was it important? to whom?
What were its costs?

System

Characteristics

Location	Evolution
Function	Parts
Design	Problems
Needs	Maintenance
Terminology	Elements
Care	History
Value	Size
Technology	Costs
Relations to other parts	Change
Description	Improvements needed

Types

Animal	Electrical
Plant	Mechanical
Social	Educational
Solar	Legal

Accounting	Weather
Transportation	Judicial
Political	Communication
Human body	River
Economic	Writing
Penal	Governmental

What do you want to know?
What are its purposes? Functions?
What are the rules governing its functioning?
Why / how was it established?
Who designed it? Who runs it? What is it a part of?
What are its parts or components?
What is its relationship to other systems?
What are its interactions with other systems?
Who uses the system?
What order or organization is there?
What does it accomplish? How does it work?
What are its strengths and weaknesses?
What does it take to make it work?
What can be done if or when the system breaks down?
What causes the system to change?
What is needed to keep it functioning?
How can it be improved?
How does it compare to other systems?
How can the system be damaged?

Theme

Characteristics

Change	Freedom
Conflict	Perseverance

Patterns	Dependence
Constancy	Altruism
Structure	Self-reliance
Creativity	Power
Man vs. Man	Man vs. Technology
Man vs. Environment	Survival
Interactions	Discovery
Systems	Interdependence
Identities	Wellness
Fight/Flight	Justice

Types

Social	Political
Economic	Environmental
Historical	Personal
Cultural	Interpersonal
Academic	Philosophical
Psychological	Dramatic
Organizational	Governmental

What do you want to know?
Why should it be studied?
How is it relevant to our lives?
What are the outcomes of the study of it?
Does it repeat in history?
What does it mean to you?
What are examples of it?
Under what conditions does it apply?
Does the discussion raise any fears?
How does the discussion of this theme help you?

Does the discussion of this theme give you any new insights / ideas?
Did the discussion change any of your ideas?
What do you understand now that you did not before?
Why is the discussion of themes valuable?

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